

SKY COUNTRY



Bi-Discovery-3

РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ
USER'S MANUAL

Bi-Discovery-3

Thank you for choosing SC Bi-Discovery-3! This manual will help you to get maximum information about your glider. This is information about the design of the Bi-Discovery-3, advice how to use it best and how to care for it to ensure it has a long life. The manual also includes technical specifications and line plans. We hope that the Bi-Discovery-3 will give you a lot of wonderful flying hours.

Bi-Discovery-3 is suited for tandem flying. Tandem pilot must have at least 50 hours of flying time. Bi-Discovery-3 is also good for paramotoring.



Warning! Paragliding is a high risk activity. We strongly recommend to learn paragliding only in certified schools and to choose only the equipment which is correspondent to Your flying skills.

Technical data

size	38	41	44
scale	1,19	1,233	1,276
wing area, sq.m.	38,15	40,95	43,86
span, m	14,23	14,75	15,26
aspect ratio		5,31	
area projected, sq.m.	32,98	35,4	37,92
span projected, m	11,24	11,66	12,07
a\r projected		3,84	
root chord, m	3,38	3,5	3,62
tip chord, m	0,6	0,62	0,64
cells		53	
Vmin*, km/h		25	
Vmax*, km/h		45	
flying weight, kg	120-180	150-210	190-250

The total weight in flight is equal to the weight of pilots and all the equipment including the wing.

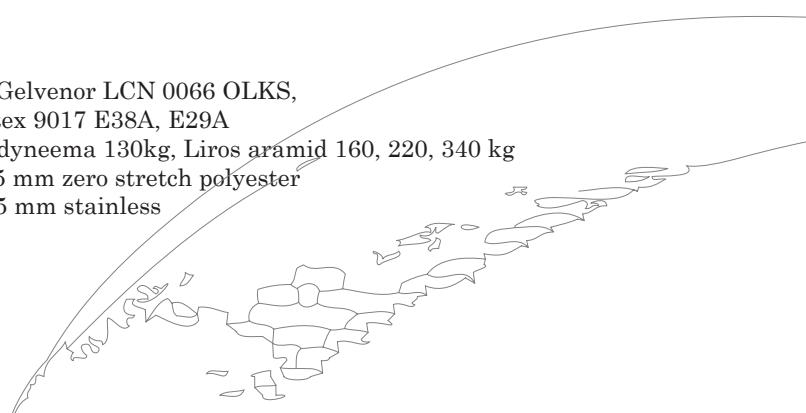
Materials

canopy material: Gelvenor LCN 0066 OLKS,
Skytex 9017 E38A, E29A

lines: Cousin dyneema 130kg, Liros aramid 160, 220, 340 kg

rizers: 25 mm zero stretch polyester

connectors: 3.5 mm stainless



Risers

Bi-Discovery-3 has the risers scheme A3A'1B5C4. The risers are equipped with trimmers, that increases the speed range of the glider.



Warning!

You are not allowed to change the paraglider construction except adjusting the brake lines, because it might lead to unpredictability in flying and make the paraglider dangerous in certain flying situations.

Pre-flight check

- Lines are clear and leading edge is open
- Karabiners and maillons are tight
- All harness buckles are closed
- Helmets on
- Check reserve parachute
- Wind direction is perpendicular to the glider
- Airspace is clear

Launching

Your Bi-Discovery-3 can take-off with both forward and reverse techniques, but for tandem gliders forward technique is preferable.

Use forward technique when the wind is light, or there is no wind.

Move forward and your glider will start to inflate. You must maintain a constant pressure on the risers until the wing is overhead. Brake it a little and launch.

Use reverse technique in strong winds

Pull the glider by its A-risers. When it is overhead, pull the brakes to stop the glider, then turn and launch.

In Flight Characteristics

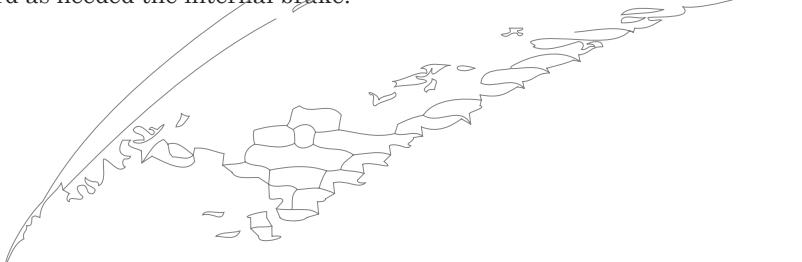
Bi-Discovery-3 has long brake travel, light brake pressure (as for tandem) and turns very well. It also has high resistance to deflations in turbulence.

Speed control

You can change speed by simultaneously pulling or releasing the brakes. Flying at trim speed (hands up) your glider will achieve its best glide ratio. When brakes are pulled approximately 30 cm - you get its minimum sink rate. In order to slow the glider you can use trimmers. We recommend to use trimmers only for landing.

Turn control

In order to make Bi-Discovery-3 turn with a minimum sink and radius while pulling the internal brake you should pull very slightly the external one too. Use weightshift to decrease the spiral radius. If the thermal flow is narrow and strong, increase the tilt and the rotation speed by releasing the external brake. When you need to turn fast, you should swing Discovery-3 in the opposite direction and then pull as hard as needed the internal brake.



Flying in turbulence

You can help your glider to avoid different collapses in turbulence - you must fly actively for it. When the glider pitches forward - use the brakes to slow it, if it goes back - release brakes. These movements can be symmetric or asymmetric.

Let us remind you once again that you should be very careful choosing the weather to fly.

Descent Techniques

Big Ears

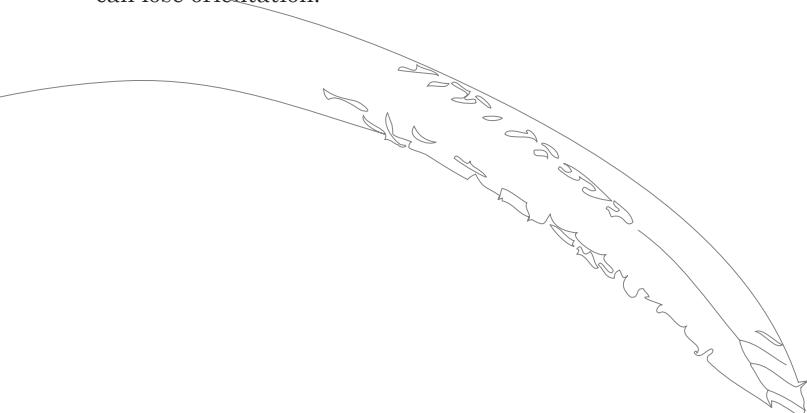
While holding the brakes you should symmetrically pull the A'-lines. For directional control of the glider use the weight shift. When you do big ears, the horizontal speed increases slightly. In order to return to normal flight, you should release the A-lines and pull the brakes a few times.

Spiraling is not permitted with big ears, because of the increased load on the remaining lines so that they can be physically deformed.

Spiral dive

When you hold either brake down for a long time, the glider goes into a fast sharp turn and loses a lot of height. The rotation axis can be somewhere between the pilot and the wing. The sink rate could be more than 15 m/sec. To get out of the spiral dive you must release the inner brake. Mind that Bi-Discovery-3 may take one more turn after releasing the brake.

While spiral diving, the pilot experiences considerable overload up to 3 – 4g, so you can lose orientation.



Landing

In small winds, when you have 1-2 meters to the ground, you should pull the brakes gently to your arms' full length, so that you put your Bi-Discovery-3 in stall at a height of about 0.2 -- 0.5 m and the horizontal speed is zero.

In strong winds you must land facing the wind. If necessary you can fold the ears. As you approach the ground, you must take B-risers while holding the brakes. As soon as you hit the ground, you must turn towards the glider and pull B-risers running towards the wing. If the wing is flopping about a meter above the ground, release the B-risers and pull the brakes hard to your arms length. We do not recommend you to use the brakes in the strong wind, as the wing could catch the wind and pull the pilot.

Do not let the glider overtake you and hit the ground with its front edge, which leads to increased pressure in the wing and may damage it.

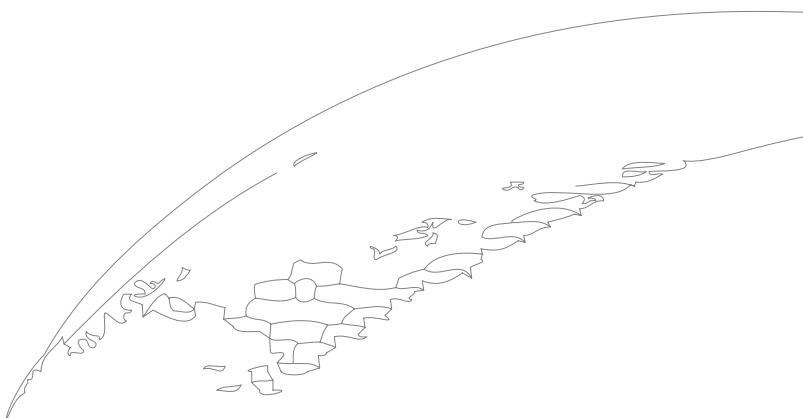
Deflations

Asymmetric collapse

Every paraglider may collapse in turbulent conditions.

Asymmetric collapses can be controlled by weight-shifting away from the collapse and applying a small amount of brake to control the flight direction. At the same time you should use the brake to re-inflate the canopy.

Remember that the deflated glider has higher stall speed and smaller brake travel. That is why you should be careful not to pull the brake too hard to avoid stall.



Deflations

Frontal collapse

Bi-Discovery-3 comes out of symmetrical front collapse by itself. You can pull the brakes about a 20 cm to speed the re-inflation.

Full stall

Full stall happens when you pull both brakes too hard. To return to the normal flight you must release both brakes. After this usually comes a front dive with a possible front deflation.

Just because Bi-Discovery-3 warns the pilot about stalling by increasing the brake load, it is highly unlikely for you to enter it unexpectedly.

Deep stall (parachuting)

To get out of this mode you must pull A – risers or swing the wing by pulling and releasing the brakes (preferably the first one).

Asymmetrical stall

It can take place when you pull one of the brakes too hard, or while spiraling at a small speed in turbulence you increase the angle of attack. Rotation in the asymmetrical stall is called negative spiral. This is one of the most dangerous flying situations. In order to get out of asymmetrical stall, just release the brakes. There may follow side thrust forward with a following wing collapse.

Self-rotation

Increasing rotation usually takes place when the pilot has not reacted properly to the asymmetric collapse of the accelerated paraglider. Try to slow down the rotation by counter-shifting your weight in the harness and pulling the outer brake. If the self-rotation is increasing, drop the rescue parachute quickly in the direction of the rotation. This mode can also take place when you make extreme turns of the overloaded paraglider.

Cravat

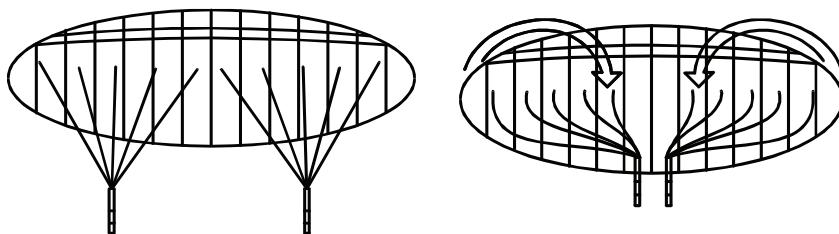
If the collapsed part of the canopy is entangled in the lines, you must try to release it by pulling the ear-line. If you cannot do it and the rotation is increasing, you must use the parachute.

In flight damage

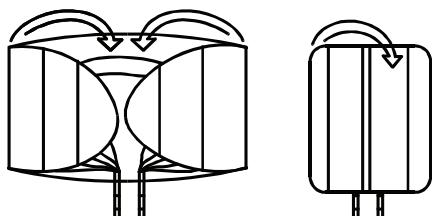
Estimate the damage. If a brake has untied - no problem as Bi-Discovery-3 can be steered well by weight shift and pulling the back risers. Even if the damage allows for a sustainable controlled flight, you should land as soon as possible. If normal flight is impossible, you must use the parachute.

Packing Your glider

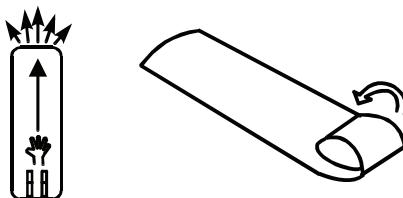
Try to pack your Bi-Discovery-3 as loosely as the rucksack allows, because every fold weakens the cloth. Special care should be taken about the rib reinforcements. Follow this scheme:



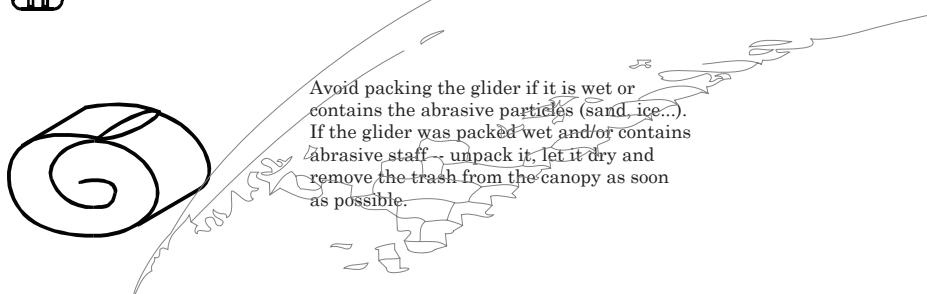
Spread the glider on the ground the bottom surface up. Put all the lines onto the canopy. The risers can be placed both at the leading or at the trailing edge.



Fold the canopy from the tips to center. Let the air come out from the canopy through the air intakes.



Press the canopy gently from the trailing to the leading edge to bring out the residual air. Then roll it from the trailing to the leading edge.



Avoid packing the glider if it is wet or contains the abrasive particles (sand, ice...). If the glider was packed wet and/or contains abrasive stuff - unpack it, let it dry and remove the trash from the canopy as soon as possible.

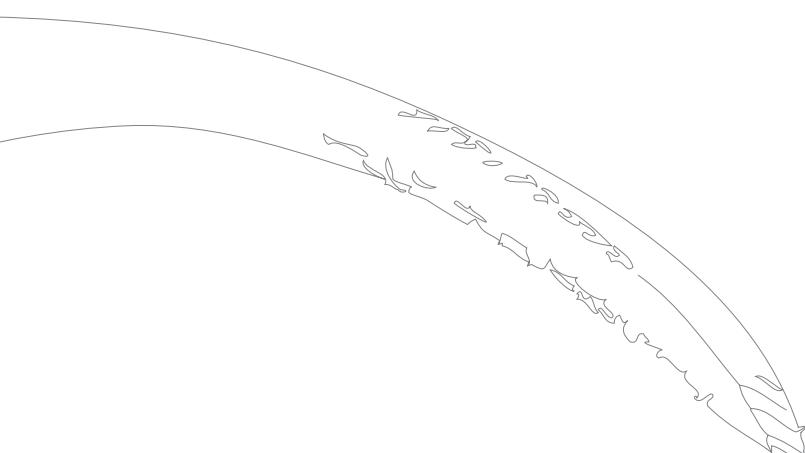
General Glider Care

Take care while using Your glider. The inappropriate and/or inaccurate use may cause the damage of the canopy and lines, and the glider may become dangerous in flight.

Follow these rules and your Bi-Discovery-3 will be in good condition:

- Do not expose your glider to the sun any longer than necessary
- Keep it away from water and other liquids
- Do not let the front edge hit the ground
- If wet dry Bi-Discovery-3 in shade. If soaked in salty water, rinse the glider thoroughly in non-salty water
- Keep your glider away from fire
- Do not put anything heavy on your glider, do not pack it in a rucksack too tightly.
- Regularly inspect the canopy, lines, risers and harness. If you find any defects, contact your dealer or the manufacturer. Do not attempt to self-repair the paraglider!
- If you detect a damaged line, inform the dealer or manufacturer about the line number according to the line plan
- Keep your Bi-Discovery-3 in a rucksack in a dry well-ventilated place under neutral temperature and humidity conditions
- If you do not use the glider, then once a month you should unpack it, ventilate it well, and then pack it back in the rucksack.
- Do not wash Bi-Discovery-3. Do not use detergents or solvents. Clean dirty places with wet soft cloth or sponge.

In the end of this manual you can find line plan. You can use this plan, if you want to order the new line instead of damaged.



Warranty and Wing Repairs

The producer guarantees the correctness of the declared characteristics and the paraglider's normal performance for one year after the purchase date, but no more than 200 flying hours. The producer conducts special, and after-warranty repairs and maintenance at the owners' request for an extra price.

We recommend to inspect your paraglider (including checking suspension line strength, line geometry, riser geometry and permeability of the canopy material) one time at two years, or every 100 hours of flying time (whichever comes first); Those inspection must be made by manufacturer or dealer.

If damaged, your Bi-Discovery-3 must be repaired by manufacturer, or dealer. Small holes in Gelvenor fabrics you can repair with silicon glue and a peace of Gel-venor cloth. Small holes in Skytex may be repaired with sticky rip-stop tape.

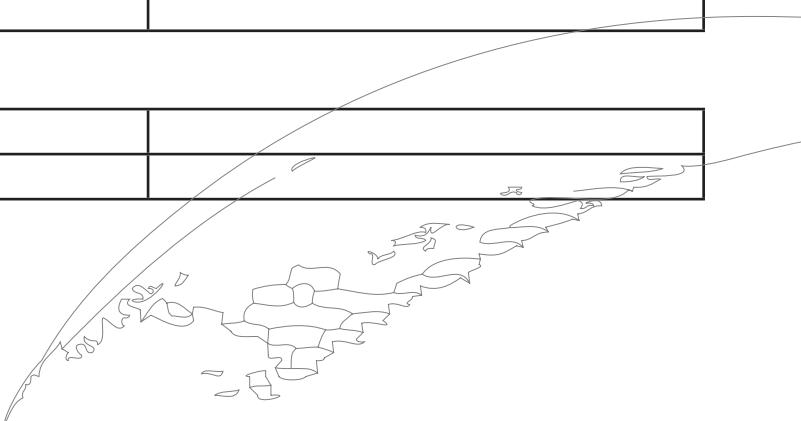
Attention please!

The producer bears no responsibility for non-compliance with the stated characteristics if:

- the user manual is not followed;
- the paraglider structure is changed in any way;
- the paraglider is self-repaired.

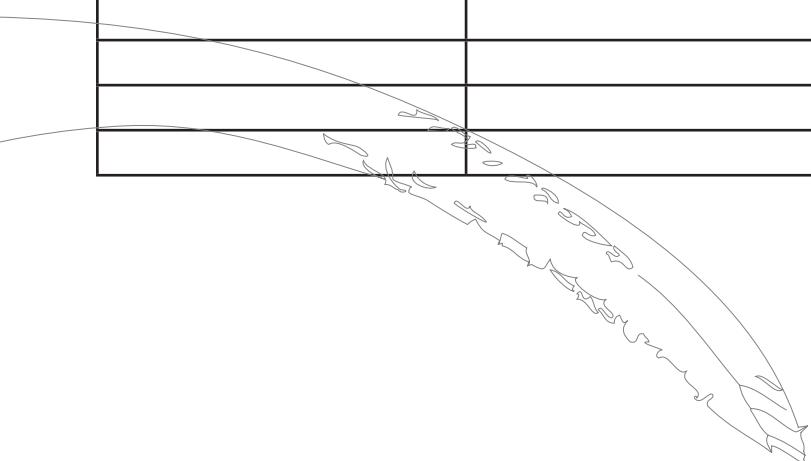
Serial number	
Production date	
Test pilot	

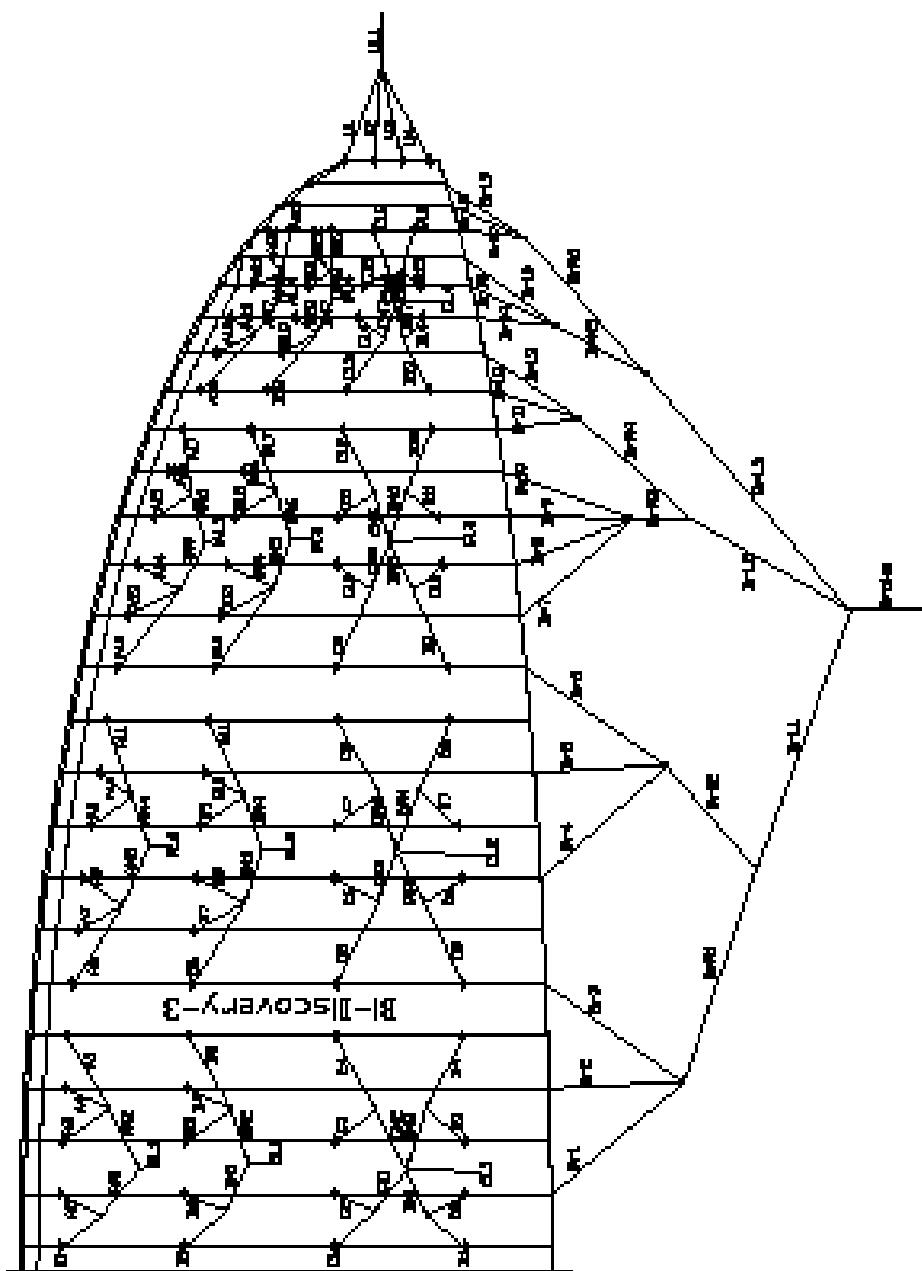
Dealer	
Date	



Bi-Discovery-3

Wing check and repairs information





Sky Country +38 057 751 56 59
www.sky-country.com